SUPPORT FOR THE AMENDMENT

Support for the amendment to claim 8 is found in claims 2 and 9 as originally presented. Support for claim 10 is found on page 10, lines 2-3 of the specification. Support for claim 11 is found on page 25, lines 9-11 of the specification. No new matter would be added to this application by entry of this amendment.

Upon entry of the amendment Claims 1-4, 8 and 10-11 will now be active in this application with claims 8, and 10-11 being under active consideration.

REQUEST FOR RECONSIDERATION

The claimed invention is directed to a method of treating hard surface with an antifouling detergent.

Applicants wish to thank examiner DelCotto for the helpful and courteous discussion held with their U.S. representative on December 11, 2007. At that time, applicants' U.S. representative argued that the cited references failed to suggest an anti-fouling method using a polymer as claimed. The following is intended to expand upon the discussion with the examiner.

Hard surface cleansing methods such as of bathroom sinks and toilet bowls, have not always excelled in providing antifouling effects. Problems with the degree of antifouling effect and rusting of metal surfaces fuels the quest for improved antifouling detergent compositions

The claimed invention addresses this problem by providing a hard surface treating method comprising treating a hard surface of a toilet bowl with an antifouling detergent comprising a polymer comprising 30-99 mol% of a monomer A derived from formula (1) or

(2)[1], a monomer B having $-SO_2-$ groups, and a monomer (C) in an B/A ratio of 0.01 to 1. Applicants have discovered that such a composition provides for an effective antifouling treatment method of a toilet bowl. Such a method is nowhere disclosed or suggested in the cited references of record.

The rejection of claim 9 under 35 U.S.C. 103 (a) over Jeschke et al. U.S. 6,251,849 or Aubay et al. U.S. 6,593,288 in view of Harada et al. in further view of Pucci et al U.S. 5,872,0888 or Aubay et al. U.S. 6,703,358 is respectfully traversed.

None of the cited references disclose or suggest an anti-fouling method using a polymer as claimed.

No Suggestion To Use A Sulfone Containing Polymer In An Anti-Fouling Method

The examiner has cited each of Jeschke et al. and Aubay et al. for methods of treating hard surface with a polymer.

None of the polymers of the cited reference contain sulfone groups ($R-SO_2-R$). Jeschke et al. merely describes a cationic polymer containing a monomer of formula I which is used as a soil release compound in cleaners for a hard surface (column 1, line 66 through column 2, line 17). Additional monomer are described at column 2, lines 25-44 as unsaturated monocarboxylic acids, olefins, alkyl esters of unsaturated carboxylic acids, substituted aromatic compounds containing unsaturated groups and heterocyclic compounds. There is no suggestion of including monomers having sulfone groups.

Aubay et al. describes a water-soluble/dispersible copolymer comprising a monomer (a) of a dialkenyl ammonium salt, monomer (b) of a hydrophilic monomer having a function of acidic nature; and a monomer (c) a hydrophilic monomer containing ethylenic unsaturation which at an (a)/(b) ratio of between 60/40 and 5/95 give a hard surface hydrophilic properties

[1] Applicants note that monomer (A) is included the monomer which is polymerized from formulas (1) or (2) into units having a cyclic structure, such as described in Harada et al.

(column 3, lines 9-10). Monomers (b) are described as water-soluble unsaturated or anhydrides of C_{3-8} carboxylic, sulfonic ($R-SO_3H$), sulfuric ($R-SO_4H$), phosphonic, or phosphoric acids (column 3, lines 62-65). Monomers (c) are described as acrylamide, vinyl alcohol, alkyl esters of (meth)acrylic acid, hydroxyalkyl esters of (meth)acrylic acid and polyalkoxylated esters of (meth)acrylic acid (column 4, lines 14-21). There is no disclosure of a sulfone group ($R-SO_2-R$) containing polymer.

To the contrary, the reference describes that at least 40% of the monomers should be an acid group containing monomer in order to confer the polymer with the ability to give a hard surface a hydrophobic property (column 3, lines 15-18). There is clearly no suggestion to add sulfone group ($R-SO_2-R$) containing monomer.

In contrast, the claimed invention is directed to a toilet hard surface treatment method using a polymer comprising 30-99 mol% of a monomer (A) derived from formula (1) or (2), a monomer (B) represented by $-SO_2-$, and a monomer (C) at a molar ratio of monomer B to A of 0.01 to 1. Applicants note that the claims have been amended to recite a toilet bowl surface and specific monomer A derived from formula (1) or (2). As neither of the primary references disclose or suggest a sulfone group ($R-SO_2-R$) containing polymer the claimed invention is clearly not rendered obvious by these references.

The examiner has cited to Harada et al. for a disclosure of a sulfone containing polymer used as a corrosion inhibitor for metals in water (column 1, lines 24-26).

The compounds act as *per se* metal corrosion inhibitors and therefore are generally added alone to a corrosive medium in order to prevent corrosion in an industrial water (column 5, lines 49-55 and column 6, lines 34-40). The polymer contains a sulfone group and a group M of either a cyclic ammonium group (I), a bicycle ammonium group (II), an exo cyclic amide (III), a cyclic sulfide (IV), cyclic sulfoxide (V), cyclic sulfone (VI), cyclic aminonitrile (VIII) or and exocyclic thiocarbonyl (VIII). The reference further fails to

describe the claimed monomer (C) or the use of a surfactant. Accordingly, the secondary reference does not describe hard surface treatment of a toilet bowl surface, the claimed monomer (C) or a surfactant.

The references which describe hard surface treatment, Jeschke et al. and Aubay et al. do not suggest sulfone groups while the secondary reference of Harada et al. fails to describe a hard surface treatment but rather a corrosion inhibitor for industrial water, fails to disclose monomer (C) or a surfactant.

The examiner's rejection appears to be based on the belief that since Harada et al. describe SO_2 as "a very easily copolymerizable monomer which provides corrosion inhibiting properties" there would be motivation to include such a monomer in either of the polymers of Jeschke et al. or Aubay et al.

Applicants respectfully submit that the ease of incorporation of an $-SO_2-$ monomer, fails to provide motivation to do so.

> The mere fact that references can be combined or modified does not render the resultant combination obvious unless the results would have been predictable to one of ordinary skill in the art *KSR International Co. v. Teleflex Inc.* 82 USPQ2d 1385, 1396 (2007) M.P.E.P. § 2143.01

Accordingly, any assertions of obviousness based on a combination of references must be predicated on a result which is **predictable** to those of ordinary skill in the art.

In the present case, the principle references are cationic polymers which provide a soil release effect (column 1, lines 7-9 of Jeschke et al. and column 1, lines 9-14 of Aubay et al.). In each case the soil release properties are tested by treating a surface with solution followed by drying on the substrate surface (column 7, lines 10-14 of Jeschke et al. and column 15, lines 21-46 of Aubay et al.). Thus each of these hard surface treatments recite steps of applying and drying of the surface in order to provide a soil release effect.

The acid corrosion inhibiting polymer of Harada et al. functions in a completely different manner than that of Jeschke et al. or Aubay et al.

Harada et al. identify the main causes of corrosion of metals in industrial water as oxygen and carbon dioxide dissolved **in water** and in the case of pickling **solutions**, corrosion is caused by acids (column 5, lines 49-56). Thus the acid corrosion inhibiting polymer of Harada et al. is added to water which is in constant contact with a metal surface subject corrosion.

Thus, the two technologies differ in their basic mode of use. The primary reference treat surface which is then dried, while the secondary reference provides continued corrosion inhibition by being present in an industrial water. The industrial water system is not dried.

The references which describe a hard surface treatment, do so by drying the polymer on the surface to be treated, while the reference which describes a sulfone containing polymer, dissolves the corrosion inhibitor into an industrial water which is not dry. In view of the fundamentally different uses of the materials of the primary reference and the secondary reference there could be not expectation of conferring corrosion resistance to the hard surface treatments of Jeschke et al or Aubay et al. by incorporating the sulfone monomer of Harada et al.. The different uses would preclude any expectation of providing the corrosion resistance.

Therefore, the examiner's articulation of motivation to add a sulfone monomer is because it would be easy. Such ease of incorporation into a polymer fails to provide any true motivation to do so. Further the expectations of doing so in terms of providing corrosion resistance would be absent. Accordingly the claimed method would not have been obvious from the cited references and withdrawal of the rejection under 35 U.S.C. §103(a) is respectfully requested.

The rejections of claims 5, 6 and 8 are believed to be moot as these claims have been canceled without prejudice to their further prosecution in one or more continuation applications.

Applicants submit that this application is now in condition for allowance and early notice of such action is earnestly solicited.

Respectfully submitted,

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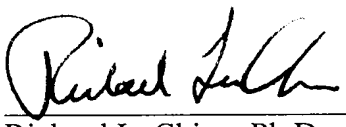

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